This report is required by law (7 USC 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

See below for additional information.

Interagency Report Control No 0180-DOA-AN

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANNUAL REPORT OF RESEARCH FACILITY
(TYPE OR PRINT)

1. Registration No: 57-F-0004
Customer No: 947

FORM APPROVED
OMB NO. 0579-0036

2. Headquarters Research Facility *(Name and Address, as registered with USDA, include Zip Code)*:

Centers for Disease Control and Prevention
1600 Clifton Road, NE
Mailstop D-14
Atlanta, GA 30333

3. **Reporting Facility** (List all locations where animals were housed or used in actual research, testing, teaching, or experimentation, or held for these purposes. Attach additional sheets if necessary)

FACILITY LOCATIONS *(sites)* **- See Attached Listing**

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY (Attach additional sheets if necessary or use APHIS Form 7023A)

A. Animals Covered By The Animal Welfare Regulations	B. Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquillizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. *(An explanation of the procedures producing pain or distress in these animals and the reasons such drugs were not used must be attached to this report.)*	F. TOTAL No. OF ANIMALS (Cols. C + D + E)
4. Dogs	0	403	25	0	428
5. Cats	0	0	0	0	0
6. Guinea Pigs	17	22	192	0	214
7. Hamsters	5	255	691	0	946
8. Rabbits	2	35	245	0	280
9. Non-Human Primates	0	401	195	0	596
10. Sheep	0	0	0	0	0
11. Pigs	0	0	0	0	0
12. Other Farm Animals	See APHIS Form 7023A				
13. Other Animals					

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2) Each principal investigator has considered alternatives to painful procedures.

3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). **A summary of all the exceptions is attached to this annual report.** In addition to identifying the IACUC-approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.

4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

(Chief Executive Officer or Legally Responsible Institutional official)

I certify that the above is true, correct, and complete (7 U.S.C. Section 2143)

Signature of C.E.O. or Institutional Official	Name & Title of C.E.O. or Institutional Official	Date Signed:
(b)(6), (b)(7)c		11-26-07

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Cow	0	0	3	0	3
Goat	0	8	2	0	10
Deer Mouse	0	60	693	0	753
Kangaroo Rat	0	33	0	0	33
Ground Squirrel	0	4	0	0	4
Bat	0	999	22	0	1021
Ferret	0	26	399	55	480
Gambian Rat	0	2	39	8	49
Gerbil	0	27	0	0	27
Pine Vole	535	0	0	0	0
Prairie Dog	0	4	0	32	36
Raccoon	0	14	42	0	56
Skunk	0	1	9	0	10
Egyptian Rousette	0	0	411	0	411
Sundevall's Roundleaf Bat	0	0	407	0	407

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2) Each principal investigator has considered alternatives to painful procedures.

3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). **A summary of all the exceptions is attached to this annual report.** In addition to identifying the IACUC-approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.

4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

(Chief Executive Officer or Legally Responsible Institutional official)

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	(b)(6), (b)(7)c	11-26-07

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Target Rat	0	0	1	0	1
Mountain Vole	0	25	34	0	59
Chipmunk	0	1	0	0	1
Northern Pocket Gopher	0	1	0	0	1
Western Jumping Mouse	0	1	2	0	3

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2) Each principal investigator has considered alternatives to painful procedures.

3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). **A summary of all the exceptions is attached to this annual report.** In addition to identifying the IACUC-approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.

4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

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(Chief Executive Officer or Legally Responsible Institutional official)

I certify that the above is true, correct, and complete (7 U.S.C. Section 2143)

Signature of C.E.O. or Institutional Official	Name & Title of C.E.O. or Institutional Official	Date Signed:
(b)(6), (b)(7)c		11-26-07

Attachment A: Facility Locations (Sites); USDA, APHIS, Form 7023, Block 3

The following facility locations are covered under registration number 57-F-0004:

1. CDC Atlanta locations:
    a. 1600 Clifton Road NE, Atlanta, GA 30333
2. (b)(2)High, (b)(7)f
3.

Attachment B: Category E Explanations, APHIS Form 7023

The following are reported for CDC-Atlanta protocols under registration number 57-F-0004:

Species (common name): Gambian Rat
Number: 8
Explanation of procedure producing pain and/or distress:
Gambian rat selected due to association with 2003 US monkeypox outbreak. Animals are experimentally infected with monkeypox virus. The development, course, or severity of clinical disease for the proposed routes of experimental inoculations is not certain, but fever, enlarged lymph nodes, and some degree of skin lesions could reasonably be expected. No information is available on susceptibility, signs of infection, virus shedding, or what samples are most appropriate for diagnosis of monkeypox virus infections.
Justification why pain and/or distress could not be relieved:
One objective of this study is to better characterize active monkeypox virus infections in a potential reservoir species. Animals developing clinical signs of fever or malaise (inappetance, decreased activity, recumbency with reluctance to move, etc.) and clinical lesions or rash (including lesions at the inoculation site) will be reported to the Attending Veterinarian for closer examination. Animals developing sustained inappetance of greater than 24 hrs, greater than 10% weight loss, and/or abnormal locomotion or posture due to skin lesions will be euthanatized. The use of analgesics or anesthetics may interfere with these study objectives.

Species (common name): Ferret
Number: 10
Explanation of procedure producing pain and/or distress:
Ferrets are an optimal animal model for the study of influenza virus pathogenesis and transmissibility because they are naturally susceptible to influenza viruses, exhibit similar disease signs and transmissibility of viruses as is seen in humans. Animals were infected intranasally with avian influenza viruses and were inspected daily for disease signs. Animals in category E either died unexpectedly without showing severe clinical signs and symptoms or were euthanatized because they exhibited the following signs: impaired respiration, > 25% weight loss, reduced body temperature for > 3 days, neurological symptoms such as paresis or torticollis.
Justification why pain and/or distress could not be relieved:
Experiments were conducted to determine whether a particular virus could transmit from infected to naïve animal. It is expected that transmissibility is at least in part associated with the amount of viral replication and use of any antiviral drugs to mitigate the infection would result in reducing the replication of the virus and therefore would interfere with the ability of a virus to transmit to naïve animals. The intranasal infection of ferrets with such viruses may produce a severe influenza infection with associated morbidity and mortality. Since the viral load and inflammatory response to virus replication may play a role in the ability of a virus to transmit from one host to another, any agent that has the potential to affect viral load or the host response to infection could interfere with the results of the experiment. Therefore, the only means to alleviate pain or distress is humane euthanasia which is performed when the animals meet the criteria described in the protocol.

Species (common name): Ferret
Number: 36
Explanation of procedure producing pain and/or distress:
Ferrets are an optimal animal model for the study of influenza virus pathogenesis and transmissibility because they are naturally susceptible to influenza viruses, exhibit similar disease signs and transmissibility of viruses as is seen in humans. Animals were infected intranasally with avian influenza viruses and were inspected daily for disease signs. Animals in category E either died unexpectedly without showing severe clinical signs and symptoms or were euthanatized because they exhibited the following signs: impaired respiration, > 25% weight loss, reduced body temperature for > 3 days, neurological symptoms such as paresis or torticollis.

Justification why pain and/or distress could not be relieved:
Experiments were conducted to determine whether a particular virus could transmit from infected to naïve animal. It is expected that transmissibility is, at least in part, associated with the amount of viral replication and use of any antiviral drugs to mitigate the infection would result in reducing the replication of the virus and therefore would interfere with the ability of a virus to transmit to naïve animals. The intranasal infection of ferrets with such viruses may produce a severe influenza infection with associated morbidity and mortality. Since the viral load and inflammatory response to virus replication may play a role in the ability of a virus to transmit from one host to another, any agent that has the potential to affect viral load or the host response to infection could interfere with the results of the experiment. Therefore, the only means to alleviate pain or distress is humane euthanasia which is performed when the animals meet the criteria described in the protocol.

Species (common name): Prairie Dog
Number: 32
Explanation of procedure producing pain and/or distress:
Prairie dogs were experimentally infected with monkeypox virus. Prairie dogs showed similar signs of disease as observed in humans during the 2003 outbreak. Animals will be checked at least once daily post-exposure, and more frequently if clinical signs of illness are noted within the test groups. Any animals that show severe signs of agent-associated distress, as determined by the attending veterinarian, will be immediately euthanized in accordance with humane practices.
Justification why pain and/or distress could not be relieved:
Prairie dogs were chosen as part of efforts to identify a good animal model for monkeypox infection. Antiviral drugs would have interfered with monitoring the pathogenicity of this virus.

Species (common name): Ferret
Number: 4
Explanation of procedure producing pain and/or distress:
Ferrets were infected with highly pathogenic influenza virus given intranasally. These viruses caused severe illness and in some cases ferrets had to be euthanized since death was not the intended endpoint. Animals will be monitored daily and will be euthanatized if they exhibit impaired respiration, weight loss of more than 30%, reduced body temperature for greater than 3 days, or neurological symptoms such as paresis or torticollis.
Justification why pain and/or distress could not be relieved:
Experiments were conducted to determine whether an influenza virus could transmit and cause disease in the animal. Anesthetics, analgesics, and/or tranquilizers cannot be used for the relief of pain due to the potential for interference with the biological effects of influenza infection. Such agents can potentially cause side affects acting as respiratory depressants or affecting the innate immune response and the replication of the virus. Therefore it is not possible to administer such therapeutic agents as they would confound the experimental results. Use of anesthetics, analgesics, and/or tranquilizers would have an effect on the innate immune response and alter the scientific outcome.

Species (common name): Ferret
Number: 5
Explanation of procedure producing pain and/or distress:
Ferrets are inoculated with the influenza virus via nasal drops. In very rare cases, ferrets infected with highly pathogenic (H5N1) influenza viruses can get very ill. As soon as they are identified, these animals will be euthanized since there is no treatment available to quickly treat animals against influenza H5N1 and to relieve the pain.
Justification why pain and/or distress could not be relieved:
Ferrets represent the best model for studying transmission and pathogenesis of highly pathogenic influenza viruses. Use of anesthetics, analgesics, and/or tranquilizers would have an effect on the innate immune response and alter the scientific outcome.

Attachment C: Exceptions to Regulations and Standards

During the reporting period, the following exceptions to the recommendations in the *Guide for the Care and Use of Laboratory Animals* were approved by the CDC-Atlanta Institutional Animal Care and Use Committee (IACUC):

1. Regarding housing two rodent species in high containment within the same room in unprotected caging, the Attending Veterinarian provided written justification for such housing and the CDC-Atlanta IACUC approved the exception. The two species involved are gregarious and they are frequently held in the same room during quarantine and distribution. One species is housed in microisolator cages and only handled under a biosafety cabinet. Rodent disease transmission can be decreased by microisolator caging or through ventilated racks. Negative ventilated racks are used for the smaller species, but due to the size of the larger rodent species, this type of caging is currently unavailable. Overall, housing multiple species of rodents in one room with proper barriers and disease prevention procedures does not cause a significant concern for interspecies disease transmission. The behavioral and physiologic stress due to interspecies conflict is minimized due to the decrease in visual contact and physical separation of the species within the room. Neither of these species has shown aggressive tendencies toward the other species.

2. Regarding two separate surgeries for *Saimiri*, *Aotus* and rhesus macaque monkeys, the CDC-Atlanta IACUC approved an exception for two separate surgeries in three different species of monkeys involved in malarial studies. Almost all animals for these studies must be splenectomized either before or during infection with different plasmodia in order to increase the production of high density parasitemia, or to stimulate the production of infective gametocytes. Some, but not all, animals will need to have live biopsies to obtain and/or detect exoerythocytic stages following sporozoite inoculation or to obtain liver cells for in vitro culture of the liver stages of different species of Plasmodium. Whenever possible, both procedures will be conducted simultaneously in order to avoid a second major surgery. In fiscal year 2007, this exception only involved a single rhesus macaque and a single *Saimiri* monkey.